What is claimed is:

1.   In a rotating disk data storage device of the type including a disk whereon data is written by a transducer head adjacent the disk in angularly extending sectors on concentric data tracks to be subsequently read therefrom by the transducer; a controller responsive to sector location pulses for locating said sectors; and means for moving the transducer head between tracks on the disk; an apparatus for providing the sector location pulses, comprising:

5

master clock means synchronized with the rotation rate of the disk for providing master clock signals indicative of the angular location of the transducer head with respect to a selected index location on the disk following passage of the index location by the transducer head;

10

a first counter clocked by the clock means;

15

latch means for storing at least one selected time corresponding to a selected angular distance along a selected track on the disk;

an accumulator connected to the latch means for adding said selected time to the contents of the accumulator each time the accumulator is

20

clocked by an accumulator clock signal;

a first comparator connected to the first counter
and the accumulator for providing an
electrical indication that the contents of the
counter is at least as large as the contents
of the accumulator;

accumulator clock means connected to the first
comparator and responsive to said electrical
indication for repetitively providing the
accumulator clock signal to the accumulator so
long as the accumulator contents does not
exceed the first counter contents;

master reset means for resetting the first counter
and the accumulator at such times that the
index location on the disk passes the
transducer head;

partial reset means for entering the selected times
into the latch means and resetting the
accumulator each time the transducer is moved
to a new track on the disk; and

sector location pulse generation means for
providing the sector location pulses to the
controller concurrently with selected
accumulator clock pulses.

2.   The apparatus of claim 1 wherein the sector

location pulse generation means comprises:

a sector location pulse gate connected to the first
comparator to receive said electrical
indication of the relative contents of the
first counter and the accumulator; and

means for generating a sector location pulse each
time the sector location pulse gate is
enabled;

wherein the apparatus further comprises:

a second counter clocked by the accumulator clock
signals;

a number of sectors latch for storing the numbers
of sectors on the tracks of the disk; and

a second comparator connected to the second
counter, the number of sectors latch and
the sector location pulse gate for disabling the
sector location pulse gate following
attainment of the value stored in the number
of sectors latch by the second counter.

3. The apparatus of claim 2 wherein the latch
means comprises:

a sector time latch for storing sector times
corresponding to angular lengths of sectors on
the tracks;

a delay time latch for storing delay times

corresponding to selected angular skew

distances of the sectors along tracks of the

disk; and

an accumulation time selector connected between the

accumulator and the sector and delay time

latches for presenting sector times to the

accumulator in an enabled state of the

selector and for presenting the delay times to

the accumulator in a disabled state of the

selector; and

wherein the apparatus is further characterized as

comprising delayed index controller means for disabling

the accumulation time selector and the sector location

location pulse gate for the first accumulator clock

signal following reset of the accumulator.

4.   The apparatus of claim 3 wherein the sector

location pulse generation means comprises means for

selecting the duration of the sector location pulses.

5.   The apparatus of claim 2 wherein the sector

location pulse generation means comprises means for

selecting the duration of the sector location pulses.

6.   The apparatus of claim 1 wherein the sector

location pulse generation means comprises means for

selecting the duration of the *sector location* ~~controller~~ pulses.

7. The apparatus of claim 1 wherein the latch means comprises:

a sector time latch for storing sector times corresponding to angular lengths of sectors on the tracks;

a delay time latch for storing delay times corresponding to selected angular skew distances of the sectors along tracks of the disk; and

an accumulation time selector connected between the accumulator and the sector and delay time latches for presenting sector times to the accumulator in an enabled state of the selector and for presenting the delay times to the accumulator in a disabled state of the selector;

wherein the sector location pulse generation means comprises:

a sector location pulse gate connected to the first comparator to receive said electrical indication of the relative contents of the first counter and the accumulator; and

means for generating a sector location pulse each

time the sector location pulse gate is

enabled; and

wherein the apparatus is further characterized as

comprising delayed index controller means for disabling

the accumulation time selector and the sector location

location pulse gate for the first accumulator clock

signal following reset of the accumulator.

8.   The apparatus of claim 7 wherein the sector

location pulse generation means comprises means for

selecting the duration of the ~~controller~~ *sector location* pulses.

9.   A method for generating controller pulses for

locating data storage sectors on data tracks of a

rotating disk data storage device having a transducer

head adjacent the surface of the disk for writing to and

reading from the sectors, comprising:

accumulating next sector times corresponding to the

locations of the sectors on the disk following

passage of a selected index location on the

disk by the transducer head;

maintaining a continuous count of a time from index

following passage of the index location by the

transducer head;

Copied from 09906308 on 05/31/2005

generating a controller pulse each time the disk

advances to a new sector on a track; and

setting the accumulated time to zero each time the

transducer head is moved to a new track on the

disk; and

repetitively accumulating next sector times

following movement of the transducer head to a

new track on the disk until the accumulation

of next sector times exceeds the time from

index.

10.   The method of claim 9 further comprising the

steps of:

maintaining a count of the number of sectors which

have reached the transducer head following

passage of the index location by the

transducer head at such times that the

transducer head is positioned adjacent a

selected track on the disk;

discontinuing generation of sector location pulses at

such times that the number of sectors that

have passed the transducer head reaches a

preselected number of sectors for the selected

track; and

following movement of the transducer to a new track

on the disk, updating the number of sectors
count to an effective number of passed sectors
between the index _location_ ~~mark~~ and _the location of_ the transducer head
on the new track.

11.   The method of claim 10 further comprising the
step of accumulating a delayed index time to be added to
the _accumulation of_ ~~next~~ sector times each time the index _location_ ~~mark~~ on the
disk passes the transducer head.

12.   The method of claim 11 wherein the step of
generating a _sector location_ ~~controller~~ pulse is further characterized
as generating a _sector location_ ~~controller~~ pulse having one of a
plurality of durations selected for each track on the
disk.

13.   The method of claim 9 further comprising the
step of accumulating a delayed index time to be added to
the next sector times each time the index mark on the
disk passes the transducer head.

14.   The method of claim 13 wherein the step of
generating a _sector location_ ~~controller~~ pulse is further characterized
as generating a _sector location_ ~~controller~~ pulse having one of a
plurality of durations selected for each track on the
disk.

15.   The method of claim 9 wherein the step of
generating a *sector location* pulse is further characterized
as generating a *sector location* pulse having one of a
plurality of durations selected for each track on the
disk.

-82-